

BIODEGRADATION OF MONOCHLOROTRIAZINYL REACTIVE RED BY *PSEUDOMONAS rudinensis* and *PSEUDOMONAS diminuta*

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Abstract

Microorganism was isolated from polluted sludge in textile industry wastewater discharge channel. Isolated microorganisms to be acclimated using Monochlorotriazinyl compound and then purification process was carried out. The result from purification of microorganisms is bacteria was named : *Pseudomonas rudinensis* and *Pseudomonas diminuta*.

Biodegradation of *Pseudomonas rudinensis* and *Pseudomonas diminuta* on red colour Monochlorotriazinyl (Mkta) analysis using Gas Chromatography showed that both of bacteria where able to degrade red colour Mkta on aerobic condition. This condition was shown by degradation of Mkta concentration from initial concentration (10 mg/l, 25 mg/l, 50 mg/l and 75 mg/l). Over 108 hours reaction time on the both bacteria. Biodegradation result analysis using Gas Chromatography Mass Spectra (GC-MS) showed series of Mkta biodegradation evens by breaking reactive ring and connecting ring that was done by *Pseudomonas rudinensis* in to 4-Metoxyaniline. After the breakage of ring, the breakage of azo ring as a chromophore ring (colour carrier) into to compound, 2 Natriumsulfonat 4-Metoxyaniline and 2 Amino 3-Natriumsulfonat Alfanaftol. This even was marked by degradation of red colour. These two compounds broke into 4-Metoxyaniline and 2 Naphteleneamine Aniline. All of these biodegradation series used Mkta compound as both carbon and energy sources for bacteria's growth

Key words : Biodegradation, monochlorotriazinyl, *Pseudomonas rudinensis*,
Pseudomonas diminuta

INTRODUCTION

Monochlorotriazinyl reactive red is once of synthetic dyes of azo group that is a Color Index Reactive Red 13 (CIRR-13). The azo dyes reactive are widely produced in the world and large amount used in textile industries (Easton, 1995; Gordon and Gregory, 1983). The used of azo dyes is 60%-70% from all of dyes

production (Easton, 1995). Azo dyes is compound which have a one or more azo bond (-N=N-) which have link with aerobic system. Azo dyes has a synthetic characteristic and